Effects of Forested SMZ Management on Ecological Functions

Issue: Streamside Management Zones are areas delineated to protect water quality. Under many state Best Management Practices, these areas are off-limits to active management. This approach impacts land value and precludes the opportunity to improve ecological functions through intentional stand manipulations. Active management of SMZ's may be able to improve ecological functions.

Study Description: Three adjacent 1st-order watersheds in Monroe County have been gaged and instrumented with automatic water samplers. Using a paired watershed approach, three SMZ treatments were installed in the spring of '99: (1) standard SMZ with no cutting permitted; (2) clearcut the SMZ to the streambank; and (3) a partial cut removing overstory pine and reducing the BA of hardwood. These SMZ management scenarios were implemented during the second thinning of the adjacent upland pine plantations. The pine stands will be clearcut in 2004 and response variables will be monitored through the final harvest. Response variables include: aquatic biota, decomposition and nutrient cycling in the SMZ, water temperature and chemistry, total suspended sediment, soil disturbance, and subsurface hydrology.

Status: The study was installed for baseline monitoring in 1997 and the SMZ treatments were implemented in the spring 1999. Basic hydrologic calibration was completed and baseline aquatic population data were developed. Responses to the SMZ treatment are being monitored. Spatial characterization of harvest disturbance has been completed and overland erosion plots are being installed.

Benefits:

- *Improved financial return from forest management*
- *Enhanced ecological functions for coastal plain SMZ's*
- *Scientific basis for BMP guidelines*

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